Section 1. Introduction

The New Jersey Department of Education gratefully acknowledges all members of the advisory group listed in Appendix A. The group represents a cross-section of educators and educational technology professionals whose experience-based perspective, suggestions and comments have been incorporated into this document.

I. Preface

This section provides an overview of the new School Facilities Guide and events leading to its development. It also includes statements about the intent, purpose and goals of this guide.

A. Document Overview

Section 1: Introduction – includes document goals, intended audience and use and critical success factors.

Section 2: Vision and Design Elements – offers higher-level rationale and guidelines for design processes, configurations for learning environments, various guiding assumptions and highlights the new role of schools.

Section 3: School Construction Process – presents the typical design phases used on large-scale projects and provides guidelines for districts to follow regarding technology infrastructure planning.

Section 4: Administrative and Learning Environments – identifies technology resources recommended for use in the various school spaces and learning environments for all learning populations.

Section 5: Standards and Systems – lists applicable code and standards and describes communications services and systems.

Appendices: Acknowledgements, typical schematic drawings, security best practices and other resource material.

B. Department of Education (DOE) Facility Standards for Technology in New Jersey Schools - Background

The guidelines contained herein are intended to replace the information found in a prior document published in 1997.

In July 2007, the NJ Schools Development Authority (SDA) awarded a contract for the fourth and final phase of a multi-phased Information Technologies Infrastructure Consulting Services project. The first three phases of the project were completed in 2006 and involved:

Phase 1: A critical review of two documents: 1) the DOE's *Facilities Standards for Technology in New Jersey Schools* and 2) the "Information Technology" section (Division 17) of the SDA's 2004 Design and Construction Manual, issued as Bulletin 36.

Phase 2:   Interviews with key DOE personnel, workshops with key stakeholders and site walkthroughs of representative schools.

Phase 3:   A summary of recommended amendments to the DOE *Facilities Standards for Technology in New Jersey Schools* document and the SDA's Division 17 Guidelines.

For the final phase of the project, the recommendations made at the end of Phase 3, along with input from this project's advisory group, have been incorporated into a new document. Sections of this new document will also be referenced in future revisions of the SDA's Design Manual.[1] The online version of this document will have links to other resource documents and information.

C.   New Document Goals

Goals for the new facilities guide document are:

- To serve as an up-to-date resource for schools involved in new construction projects or schools with technology upgrade initiatives, including additions and renovations.

- To help schools and districts plan for and make intelligent decisions regarding technology and technology infrastructure (Please note that this document is not prescriptive, but presents recommendations, except where construction code or statutory requirements are cited).

- To insure that key stakeholders are involved in all stages of the technology planning process.

II.   Intended Audiences and Use

This document is intended for a broad audience including, but not limited to: school district administrators, school board members, information technology directors, teachers, students, support staff, parents, business representatives, design consultants (i.e. architects and technology consultants). It is to be used as an updatable resource for those involved in new construction, renovations, and technology upgrade initiatives.

A.   School Design Team Participants

Individuals who ultimately use and support educational technology systems (i.e. teachers, curriculum supervisors, students, technology staff) should be involved throughout the design process. It is equally important that school administrators with fiscal and managerial responsibilities (i.e. superintendents, business administrators, and principals) participate in the design process in order to understand the project and to be able to support its implementation.

---

[1] http://www.njsda.gov/business/Doc_Form/PDFsForms/DM.pdf

Design Participant Groups Defined: For purposes of this document, in this, and subsequent sections, the following terms are used:

- Key Stakeholders – Key stakeholders refer to: school/district representatives including the superintendent, board of education/buildings & grounds committee, students, teachers, administrators, curriculum supervisors, support staff, IT staff/IT review committee, and community representatives.

- Design consultant – The architect and/or engineers or other professional services personnel of record providing design services on the project.

- Project team – Team comprises key stakeholders, design consultant, construction manager (if used), project management firm (if used), contractors, and SDA project manager (if a project is being directly overseen by the SDA).

Depending on the size and scope of the project, some or all of the following groups should participate in the technology design/planning process.

- Board of Education Facilities Committee/Superintendent:
  Suggested tasks include: reviewing design alternatives, approving Ed Specs, reviewing construction documents, receiving progress reports during construction. The district should also consult with their Executive County Superintendent (ECS) in order to determine the appropriate level of ECS oversight for construction projects.

- Project Committee of Teachers, Administrators, Curriculum Supervisors and Support Staff:
  Suggested tasks include: taking part in programming meetings with design consultant, reviewing construction documents, receiving progress reports.

- IT staff/IT Review Committee:
  Suggested tasks include: taking part in all technology design meetings with design consultant, reviewing and approving all iterations of technology-related design documents, receiving progress reports.

- Students, Community
  Suggested tasks include: taking part in programming meetings with design consultant. Students and community may be invited to join the review committee.

The concept of key stakeholder involvement is covered in depth in Section 3 of this document.

III.   Critical Success Factors

For new technical guidelines to be most effective, they need to be accompanied by a commitment from the DOE, the SDA, and the districts to support and nurture additional areas that have been identified as critical success factors.

A.   Leadership & Vision

Teachers and technology coordinators require a clear vision of 21st century teaching and learning environments and how the school and district leadership can meet this vision. Superintendents and principals need an equally clear vision as to the role of technology with respect to the improvement of teaching and learning, and how it supports the various noninstructional operations of the school. Without this vision and leadership, critical driving forces are missing. A quality technology plan that is understood and used by all levels of leadership and all stakeholders is the best tool for documenting the school's technology vision.

B.   Professional Development

A 21st century teaching and learning community requires professional development in order to properly leverage the power of a 21st century educational facility. Merely adding wires, technologies, and software applications will not change the way teachers teach or students learn. School staff must be provided with ongoing and sustained professional development based on current research and best practices in order to enhance the integration of technology into the classroom. If professional development is made a part of the district vision and is supported with time, resources, and opportunity, then the efforts of the technology planning and design groups have a greater likelihood for success. To obtain maximum value from professional development efforts, there needs to be a follow-up process that links professional development activities to actual classroom practices. The use of teacher mentoring and master teachers to support teaching staff is recommended. It is also reasonable to expect that incoming teachers officially attain a certain level of educational technology skills, such as NETS for Teachers (NETS-T), through preservice preparation.

C.   Technical Support and End- User Support

The impact of specific infrastructure design strategies should be linked to the technical support required to maintain systems over time. Districts with limited technical support budgets and staff need to clearly understand the implications that design decisions have on technical support needs. Districts should look to implement remote desktop management automation tools that can reduce travel time and allow the typical tech support employee in NJ Schools, who is responsible for multiple, geographically dispersed schools, to more effectively maintain sites.

D.   Effective Turnover of Facility

At the end of a large-scale construction project, it is important that the principal, teachers, administrators, and school district support staff fully understand the characteristics of the new or renovated facility and how to use it effectively. Commissioning [2] of major building systems is part of most construction projects. However, commissioning of technology systems has not typically been part of the building commissioning scope of work.

To ensure that technology systems moneys are used effectively, regular audits and random site checks should be made. The subject of technology commissioning is addressed further in Section 5 of this document.

---

[2] Building commissioning is the systematic process of ensuring that a building's complex array of systems is designed, installed, and tested to perform according to the design intent and the building owner's operational needs.